

# Assessment of Knowledge and Practices regarding Vitamin A and its Deficiency among the Mothers of under Five Children in Selected Areas under Sonapur BPHC, Kamrup (M), Assam

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**Abstract:** *Background of the study:* Vitamin A Deficiency is a major public health nutrition problem in the developing world. It especially affects young children, among whom deficiency can cause xerophthalmia and lead to blindness, limit growth, weaken innate and acquired host defences, exacerbate infection and increase the risk of death. *Methodology:* A descriptive quantitative research approach and descriptive survey design was adopted for the study. 189 mothers of under five children were selected using multistage random sampling technique. *Results:* Out of 189 mothers of under five children, 107 (56.6%) had moderately adequate knowledge and 108 (57.1%) had average practices regarding Vitamin A and its Deficiency. Perfect positive correlation was found between knowledge and practices ( $r = 0.986$ ). Significant association was found between knowledge regarding Vitamin A and its Deficiency and age of the mothers, education qualification of the mothers, religion, number of children, occupation of the mothers, family income per month, and sources of information regarding Vitamin A and its Deficiency. Similarly, significant association between practices regarding Vitamin A and its Deficiency and age of the mothers, education qualification of the mothers, religion, number of children, occupation of the mothers, family income per month, and sources of information regarding Vitamin A and its Deficiency. *Conclusion:* There is a need to increase the level of knowledge and practices regarding Vitamin A and its Deficiency. Hence it is essential for health care professional to organise various effective programs and to take up interventional measures for improving their knowledge and eventually improving their practices regarding Vitamin A and its Deficiency.

**Keywords:** Knowledge, Practices, vitamin A and its deficiency

## 1. Introduction

Children represent the future of the nation and ensuring their healthy growth and development ought to be a prime concern of all societies. Every child has the right to lead a decent life.<sup>1</sup>

Vitamins and minerals are essential for children's growth and development. They are essential for repair and nourishment, the formation of bones, muscles and skin, metabolic and nutritional functions.<sup>2</sup>

During the first year after birth, breast milk from a well-nourished mother provide all vitamins that an infant's needs, since 12% of the children (1-5yrs) constitutes a valuable and much neglected population of our country education and health status of children of a nation is a highly reliable index of health of its population, under five children suffer from major health problem of them is vitamin deficiency disorders and the reason are overcrowding, unhygienic products, poor environmental health, poor education or lack of knowledge in mothers and poor nutrition.<sup>3</sup>

Vitamin-A Deficiency is a major public health problem to most deficiency countries. In children, vitamin-A deficiency

disorder is the leading cause of preventable visual impairment and blindness. Vitamin-A was estimated to affect between 75 and 254 million preschool children each year. In a recent meta-analysis conducted by West 127.2 million preschool-aged children were vitamin A-deficient; it represents 25% of preschool-aged children in developing countries and in one developed country experiencing social conflict. Estimated 250,000–500,000 vitaminA deficient children become blind every year, and about half of them die within a year of becoming blind. Vitamin-A Deficiency significantly increases the risk of severe illness and death from common childhood infections, particularly diarrhoeal diseases and measles. It was estimated that worldwide, vitamin-A deficiency may be responsible for as many as 1.3–2.5 million deaths annually.<sup>4</sup>

Vitamin A Deficiency occurs in children mainly due to poor dietary intake or defective absorption and metabolism. It can affect any age group, but it's most severe blinding complications affect children aged six months to three years. It was estimated that 127 million preschool children and under five years of age are vitamin A deficient, of whom 4.4 million have xerophthalmia.<sup>1</sup>

Eyes are windows for the human being through which they are able to utilize the entire glory of the nature. This vision

can be affected by many factors such as faulty practices, malnutrition and infections. Vitamin-A is essential nutrient that play an important role in vision.<sup>5</sup>

Since, Vitamin A Deficiency is a major cause of childhood mortality and morbidity in India and other developing countries. The investigator felt the need for assessing the knowledge and practices of Vitamin A and its Deficiency among the mothers of under five children as mothers are the main care givers in the family to promote health and to prevent various deficiency disorders among children.

### 1.1. Statement of the Problem

“Assessment of knowledge and practices regarding Vitamin A and its Deficiency among the mothers of under five children in selected areas under Sonapur BPHC, Kamrup (M), Assam.”

### 1.2. Objectives of the study

Objectives of the study are formulated to:

- 1) Assess the level of knowledge regarding vitamin A and its deficiency among the mothers of under five children in selected areas under Sonapur BPHC, Kamrup (M), Assam.
- 2) Assess the level of practices regarding Vitamin A and its Deficiency among the mothers of under five children.
- 3) Correlate between the knowledge and practices regarding Vitamin A and its Deficiency among the mothers of under five children.
- 4) Find out the association between the level of knowledge regarding Vitamin A and its Deficiency among the mothers of under five children and selected demographic variables. e.g. age of the mothers, education qualification of mothers, religion, type of family, number of children, occupation of the mothers, family income per month, type of family diet and sources of information regarding Vitamin A and its Deficiency.
- 5) Find out the association between the level of practices regarding Vitamin A and its Deficiency among the mothers of under five children and selected demographic variables. e.g. age of the mothers, education qualification of mothers, religion, type of family, number of children, occupation of the mothers, family income per month, type of family diet and sources of information regarding Vitamin A and its Deficiency.

## 2. Review of Literature

Review of literature is organized under the following headings:

### Studies related to prevalence of vitamin A and its deficiency among children

**Ssentongo P et al (2020)** conducted a population based cross-sectional study on association of vitamin A deficiency with early childhood stunting in Uganda. The sample consisted of 4,765 children aged 6–59 months who

participated in 2016 Demographic and Health Surveys were selected by using multistage stratified sampling design. The data were collected through more-detailed interview with height and weight information and blood samples for laboratory testing of blood retinolbinding protein, a surrogate marker for vitamin A concentration. The study result revealed the prevalence of VAD was 8.9%. Twenty-seven per cent were stunted, 4% wasted, and 17% underweight. After adjusting for household factors (e.g., wealth index, education and working status of parents, owning land for agriculture, livestock, herds, or farm animals), vitamin A supplementation, and community factors (e.g., population density, crop growing season lengths, place of residence), children with VAD had 43% higher odds of stunted growth than those without VAD (adjusted odds ratio, 1.43. No association was observed between VAD and wasting or underweight. The study concluded that vitamin A deficiency was associated with higher odds of stunting, and the association was independent of the individual, household and community-level variables.<sup>6</sup>

### Studies related to knowledge and practices regarding vitamin A and its deficiency among the mothers.

**Patel EM, Adithya S, Bhakta PM, Prajapati BM, Rathod PV, Patel YM (2020)**<sup>7</sup> on knowledge and practice regarding vitamin-A and its deficiency among mothers of under five children in selected rural areas of Vadodara, Gujarat, India. A total of 390 mothers of under five children were selected using non probability convenient sampling technique. The study result showed that among majority of the samples (90%) were having poor, (8.71%) were having average and (1.28%) were having good knowledge score. Majority of the samples (83%) have demonstrated poor practice and (17%) have demonstrated good practice regarding Vitamin A and its Deficiency. The study concluded that significant low level of knowledge and poor practices regarding Vitamin A and its Deficiency was found. Knowledge of food based Vitamin A can make sustained improvements in knowledge and dietary practices.<sup>7</sup>

**Bhatia A (2017)**<sup>8</sup> carried out a descriptive study on knowledge regarding vitamin A deficiency disorders among mothers of under-five children in selected rural area of district Ludhiana, Punjab. 60 mothers were selected using convenience sampling technique. Data were collected by using self-structured questionnaire. The study result revealed that majority of mothers 37(61.67%) had average knowledge and 23(38.33%) had good knowledge regarding vitamin A deficiency disorders. The study concluded that majority of mothers had average knowledge regarding vitamin A deficiency disorders and socio demographic variables i.e. education and occupation of mother found to be statistically significant with knowledge score of mother.<sup>8</sup>

## 3. Methodology

A descriptive quantitative approach and descriptive survey design were adopted for the study. This study was conducted among 189 mothers of under five children residing in 12 selected villages under 4 sub-centres of Sonapur BPHC, Kamrup (M) Assam using multistage random sampling technique. Structured interview schedule was used to assess

the knowledge and practices regarding Vitamin A and its Deficiency among the mothers of under five children. The reliability of structured interview schedule was tested by Spearman- Brown split half method. The obtained data were analysed using descriptive and inferential statistics. Institutional Ethics Committee clearance was obtained before the commencement of the study. Verbal and written consent were obtained from all the participants prior to data collection. The participants were assured of the confidentiality of the obtained data. To assess the correlation between variables, Karl Pearson's Correlation Coefficient was used. Pearson chi-square test was used to test any association between research variables and demographic variables.

### 3.1. Sampling criteria

Inclusion criteria

- Mothers who were willing to participate in the study.
- Mothers who were available during data collection.

Exclusion criteria

- Mothers who were seriously ill.
- Mothers who were health personnel.

### 3.2. Variables

The variables selected for the present study were as follows:

- Research variables: knowledge and practices among mothers of under five children.
- Demographic variables: age of the mothers, education qualification of mothers, religion, type of family, number of children, occupation of the mothers, family income per month, type of family diet and sources of information regarding Vitamin A and its Deficiency.

## 4. Results

The data were analyzed by using descriptive and inferential statistics. Analysis of the study findings were organized, classified and presented under the following sections:

### Section I: Frequency and Percentage distribution of mothers according to demographic variables.

A total of 189 mothers of under five children were included in the study. Analysis of the demographic characteristic of the study group showed that almost half of the mothers(48.2%)belonged to the age group 25- 30 years. The educational qualification of the majority group was middle school passed (26.4%). Most of the mothers belonged to Hinduism (79.4%). Nuclear family was predominant in the study (50.2%).Majority of mothers (54.5%) had onechildren and (89.4%) were housewives.(75.6%) of mothers belonged to the monthly income per month of Rs10,002-29,972. The most of the mothersfamily diet were non- vegetarian (91.5%). Greater number of the mothers obtained Vitamin A and its Deficiency related information from the health personnel, i.e., (46.6%).

### Section II: Assessment of the level of knowledge and area wise mean and standard deviation of knowledge level among the mothers of under five children regarding vitamin A and its deficiency.

Among 189 mothers of under five children, maximum number 107(56.6%)of mothers had moderately adequate knowledge regarding Vitamin A Deficiency, followed by 48(25.4%) mothers had inadequate knowledge and34(18.0%) had adequate knowledge.The overall mean was found as 18.25 with standard deviation  $\pm$  3.98. Thus the findings indicated that there was moderately adequate knowledge regarding vitamin A and its deficiency among the under five children.

### Section III: Assessment of the level of practices and mean and standard deviation of practices level among the mothers of under five children regarding Vitamin A and its Deficiency.

Among 189 mothers of under five children, majority 108 (57.1%) of mothers had average practices regarding Vitamin A and its Deficiency, followed by 46 (24.4%) had poor practices and 35(18.5%) had good practices. The overall mean was found as 8.17 with standard deviation  $\pm$  2.68. Thus the findings indicated that there was average practices regarding Vitamin A and its Deficiency among the mothers of under five children

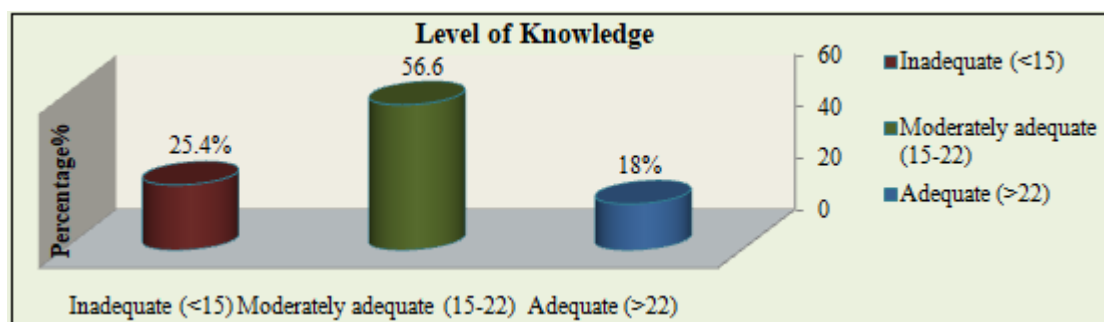


Figure 1: Bar diagram showing Level of Knowledge of Mothers regarding Vitamin A and its Deficiency

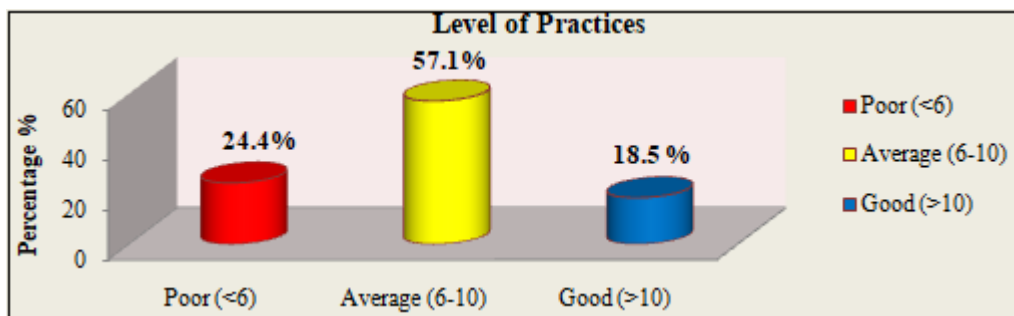


Figure 2: Bar diagram showing Level of Practices of Mothers regarding Vitamin A and its Deficiency

**Section IV: Correlation between the knowledge and practices regarding Vitamin A and its Deficiency among mothers of under five children.**

The study tested the correlation between knowledge and practices regarding Vitamin A and its Deficiency of the mothers of under five children using Karl Pearson’s Correlation Coefficient. Obtained value ( $r=0.986$ ,  $p<0.001$ ) indicates perfect positive correlation between knowledge and practices regarding Vitamin A and its Deficiency and the result is depicted in Table 1.

**Table 1:** Correlation between knowledge and practices regarding Vitamin A and its Deficiency among the Mothers of under Five Children,  $n=189$

Variables	Mean	SD	Pearson Correlation ‘r’ value	p-value
Knowledge scores	18.25	3.98	0.986	<0.001
Practices scores	8.17	2.68		

**Section V: Association between the level of knowledge regarding Vitamin A and its Deficiency among the mothers of under five children with selected demographic variables.**

The study associated the level of knowledge regarding Vitamin A and its Deficiency with selected demographic variables using Pearson chi-square test. The findings showed significant association between the level of knowledge and age of the mothers, education qualification of the mothers, religion, number of children, occupation of the mothers, family income per month, and sources of information regarding Vitamin A and its Deficiency. On the contrary, there was no significant association between the level of knowledge and type of family and type of family diet. The findings are depicted in Table 2.

**Table 2:** Association between level of knowledge regarding Vitamin A and its Deficiency with selected demographic variables,  $n=189$

Demographic variables	Level of knowledge			Chi square	df	p value	Remark
	Inadequate	Moderately adequate	Adequate				
<b>Age of the mothers</b>							
a. 19-24 years	28	40	5	19.06	4	<0.001	S
b. 25-30 years	17	49	25				
c. Above 30 years	3	18	4				
<b>Education qualification of the mothers</b>							
a. Illiterate	2	0	0	268.44	10	<0.001	S
b. Primary school passed	23	0	0				
c. Middle school passed	23	27	0				
d. High school passed	0	49	1				
e. Higher secondary passed	0	31	5				
f. Graduate and above	0	0	28				
<b>Religion</b>							
a. Hinduism	36	91	23	35.59	4	<0.001	S
b. Islam	11	15	2				
c. Christian	1	1	9				
<b>Type of family</b>							
a. Nuclear	28	47	20	7.52	4	0.111	NS
b. Joint	3	23	4				
c. Extended	17	37	10				
<b>Number of children</b>							
a. One	22	50	31	24.75	4	<0.001	S
b. Two	23	52	1				
c. More than two	3	5	2				
<b>Occupation of the mothers</b>							
a. Housewife	43	101	25	45.21	8	<0.001	S
b. Daily wage earner	4	0	0				
c. Business worker	1	2	0				
d. Government employee	0	0	6				
e. Private employee	0	4	3				

<b>Family income per month</b>							
a. Rs 10,001	16	13	1	51.92	4	<0.001	S
b. Rs 10,002-29,972	32	90	21				
c. Rs 29,973-49,961	0	4	12				
<b>Type of family diet</b>							
a. Vegetarian	6	7	3	1.53	2	0.467	NS
b. Non- vegetarian	42	100	31				
<b>Sources of information regarding Vitamin A and its Deficiency.</b>							
a. Health personnel	21	58	9	43.88	14	<0.001	S
b. Friends	7	28	1				
c. Relatives	9	13	7				
d. Neighbours	2	2	2				
e. Newspaper	0	1	1				
f. Magazine	0	1	1				
g. Television	8	2	11				
h. Internet	1	2	2				

**Section VI: Association between the level of practices regarding Vitamin A and its Deficiency among the mothers of under five children with selected demographic variables.**

The association between the level of practices regarding Vitamin A and its Deficiency with selected demographic variables showed that practices was significantly associated

with age of the mothers, education qualification of the mothers, religion, number of children, occupation of the mothers, family income per month, and sources of information regarding Vitamin A and its Deficiency. On the contrary, there was no significant association between the level of practices and type of family and type of family diet. The findings are shown in Table 3.

**Table 3:** Association between level of practices regarding Vitamin A and its Deficiency with selected demographic variables, n=189

Demographic variables	Level of practices			Chi square	df	p value	Remark
	Poor	Average	Good				
<b>Age of the mothers</b>				21.30	4	<0.001	S
a. 19-24 years	28	40	5				
b. 25-30 years	15	50	26				
c. Above 30 years	3	18	4				
<b>Education qualification of the mothers</b>				262.13	10	<0.001	S
a. Illiterate	2	0	0				
b. Primary school passed	23	0	0				
c. Middle school passed	21	29	0				
d. High school passed	0	48	2				
e. Higher secondary passed	0	31	5				
f. Graduate and above	0	0	28				
<b>Religion</b>				35.03	4	<0.001	S
a. Hinduism	34	92	24				
b. Islam	11	15	2				
c. Christian	1	1	9				
<b>Type of family</b>				7.14	4	0.129	NS
d. Nuclear	26	48	21				
e. Joint	3	23	4				
f. Extended	17	37	10				
<b>Number of children</b>				22.20	4	<0.001	S
a. One	22	50	31				
b. Two	21	53	2				
c. More than two	3	5	2				
<b>Occupation of the mothers</b>				44.68	8	<0.001	S
a. Housewife	41	102	26				
b. Daily wage earner	4	0	0				
c. Business worker	1	2	0				
d. Government employee	0	0	6				
e. Private employee	0	4	3				
<b>Family income per month</b>				60.31	4	<0.001	S
a. Rs 10,001	16	13	1				
b. Rs 10,002-29,972	30	92	21				
c. Rs 29,973-49,961	0	3	13				
<b>Type of family diet</b>				2.82	2	0.244	NS
a. Vegetarian	6	6	4				
b. Non- vegetarian	40	102	31				



Sources of information regarding Vitamin A and its Deficiency				45.48	14	<0.001	S
a. Health personnel	21	58	9				
b. Friends	7	28	1				
c. Relatives	8	14	7				
d. Neighbours	2	2	2				
e. Newspaper	0	1	1				
f. Magazine	0	1	1				
g. Television	7	2	12				
h. Internet	1	2	2				

## 5. Discussion

The study findings show that majority (56.6%) of mothers had moderately adequate knowledge regarding Vitamin A Deficiency, (25.4%) mothers had inadequate knowledge and the minimum number i.e. (18.0%) had adequate knowledge. Thus the findings indicated that there was moderately adequate knowledge regarding Vitamin A and its Deficiency among the under five children.

The study findings were supported by a similar study performed by **Sindhu PR, Nirmala M, Subalakshmi P (2020)**<sup>9</sup>, to find out the level of knowledge about Vitamin A and its Deficiency among the mothers of under five children. The study findings revealed that (40.0%) of mothers had moderately adequate knowledge, (36.67%) of mothers had inadequate knowledge and only (23.33%) of mothers had adequate knowledge regarding Vitamin A Deficiency.

In the present study findings revealed that majority (57.1%) of mothers had average practices regarding vitamin A and its deficiency, followed by (24.4%) had poor practices and (18.5%) had good practices. Thus the findings indicated that there was an average practices regarding Vitamin A and its Deficiency among the mothers of under five children.

In contrast to the study, the study performed by **Khaliq R, Rahman M, Afzal M, Rizvi F (2008)**<sup>10</sup>, to find out the level of practices among the mothers of children under five years regarding Vitamin A intake and its Deficiency. The study finding showed that (83%) mothers had unhealthy practices and (17%) of mothers had healthy practices regarding Vitamin A intake and its Deficiency.

The present study findings revealed perfect positive correlation between the knowledge and practices regarding Vitamin A and its Deficiency among the mothers of under five children since the value of Pearson  $r = 0.986$ , which was  $> 0$  and  $< 1$ .

The present study was consistent with the study done by **Patel EM, AdithyaS, Bhakta PM, Prajapati BM, Rathod PV, Patel YM. (2020)**<sup>7</sup> on knowledge and practice regarding vitamin-A and its deficiency among mothers of under five children where the result showed there was a significant relationship between levels of knowledge and practice regarding vitamin A and its deficiency ( $p=0.001$ ).

In the present study there was a significant association between level of knowledge regarding Vitamin A and its Deficiency and age of the mothers, education qualification of the mothers, religion, number of children, occupation of the mothers, family income per month, and sources of

information regarding Vitamin A and its Deficiency. On the other hand, there was no significant association between level of knowledge and type of family and type of family diet.

The similar study was conducted by **Kushwaha AS, Prasad K (2018)**<sup>11</sup> in selected slum area Bhopal where the result showed significant association between knowledge scores and education, family income and occupation of mothers of under five children.

In contrast to the study, it was found in the study carried out by **Sindhu PR, Nirmala M, Subalakshmi P (2020)**<sup>9</sup> that there was no significant association between the knowledge and age of the mother, religion, occupation of the mother and sources of information regarding vitamin A and its deficiency.

In the present study there was a significant association between level of practices regarding Vitamin A and its Deficiency and age of the mothers, education qualification of the mothers, religion, number of children, occupation of the mothers, family income per month, and sources of information regarding vitamin A and its deficiency. On the other hand, there was no significant association between level of practices and type of family and type of family diet.

The similar study was conducted by **Sheth AM, Rangoonwala MM, Lodhiya KK, Zalavadiya DD, Joshi NB. (2016)**<sup>12</sup> the result showed significant association between practices scores and education qualification of mothers.

## 6. Conclusion

The present study was conducted to assess the knowledge and practices regarding Vitamin A and its Deficiency among the mothers of under five children in selected areas under Sonapur BPHC, Kamrup (M), Assam. The study findings revealed that majority of the mothers i.e. 56.6% had moderately adequate knowledge and 57.1% had average practices on Vitamin A and its Deficiency. The level of knowledge and practices were significantly associated with selected demographic variables such as age of the mothers, education qualification of the mothers, religion, number of children, occupation of the mothers, family income per month, and sources of information regarding Vitamin A and its Deficiency. Family are the back bone of the societies and mothers are the main care givers in the family to promote health and to prevent various deficiency disorders among children. There is need to increase the level of knowledge and practices on Vitamin A and its Deficiency. Hence it is essential for health care professional to organise various

effective programs and to take up interventional measures for improving their knowledge and eventually improving their practices regarding Vitamin A and its Deficiency.

## 7. Recommendations

- A similar study may be replicated on a large sample size of the same characteristics for better generalization of the findings.
- An experimental study can be carried out to determine effectiveness of Structured Teaching Planning on knowledge regarding prevention of Vitamin A Deficiency in children among mothers of children below five years.
- An exploratory study can be conducted to identify the factors influencing improper practices on Vitamin A and its Deficiency.
- A comparative study can be carried out in rural and urban settings.
- A research tool can be updated and assess knowledge, attitude and practices of mothers of under five children regarding Vitamin A and its Deficiency.
- A study can be done to evaluate effectiveness of Information booklet on knowledge regarding Vitamin A Deficiency and its prophylaxis among mothers of under five year children.

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